

REMARKS

Applicant respectfully asserts that a new supplemental declaration under 37 C.F.R. § 1.67(a) is not required. The original declaration filed on June 9, 2006 properly identified the current application by the PCT number that was nationalized in the United States. This satisfies the identification requirement set forth in M.P.E.P. § 1896. Thus, the oath or declaration does not need to identify the current application by its United States application number.

Applicant respectfully traverses the Examiner's position that it would have been obvious to use both copperas and filter salt along with a mineral acid regulator to reduce the amount of chromate in a cement composition. The Examiner has indicated that test results showing a comparison between the combination of copperas and filter salt plus a mineral acid regulator (MAR), and 2) copperas and MAR should be provided to demonstrate patentability. The attached document provides such a comparison and demonstrates the unexpected results of the claimed invention.

In the attached document, various samples (i.e. A through E) are prepared that are then added to cement and the amount of chromium reduction resulting from the addition of each sample is assessed. Each sample includes limestone as the MAR as shown by the CaCO_3 concentration in the Table in Section 2. As set forth in the Declaration of Dr. Auer, the acid regulator "merely has the function of a neutralizing agent to enhance the pH value of the strong acidic filter salt containing mixtures..." (Auer Decl. at ¶ 5; Specification at ¶ 9). This is done to allow for safe handling of the compounds. Thus, one of skill in the art would recognize that there is no particular

amount of acid regulator that is required for the successful use of the invention.

As can be seen in the Table in Section 3.1, the combination of copperas and filter salt in Samples C, D, and E affords surprisingly better chromate reduction than would be expected by one of skill in the art based on the results of either copperas or filter salt alone with a MAR. Sample A used 0.7 kg/t/ppm of copperas alone with a MAR and achieves a reduction of chromate to 0.2 ppm. Sample B used 0.7 kg/t/ppm of filter salt alone with a MAR and achieves a reduction of chromate to 10 ppm. One of skill in the art would expect the effectiveness of varying ratios of copperas to filter salt to have a linear relationship based on the relative amount of each material and the effectiveness of each pure material.

Thus, one of skill in the art would expect that a 1:1 ratio of copperas to filter salt that totals 0.7 kg/t/ppm (like Sample C in the first row of Table 3.1) would achieve a chromate reduction to 5.1 ppm. However, the actual 1:1 mixture of copperas and filter salt having a total of 0.7 kg/t/ppm as shown in the first row of Sample C in Table 3.1 achieved a chromate reduction to 2.2 ppm. This evidences an unexpected synergistic effect that is present due to the combination of copperas and filter salt over the use of either alone. Similarly, a 3:1 ratio totaling 0.7 kg/t/ppm would be expected to achieve a reduction of chromate to 2.65 ppm, which is significantly higher than the actual chromate reduction of 0.3 ppm that is achieved (See first row of Sample D). Likewise, a 5:1 ratio of copperas to filter salt totaling 0.7 kg/t/ppm would be expected to achieve a reduction of chromate to 1.66 ppm, which is significantly higher than the actual chromate reduction of 0.4 ppm that is achieved (see first row of Sample E). Thus, the combination of copperas and filter salt results in an unexpected synergistic effect that

provides surprisingly better results compared to what would be expected based on the chromate reduction ability of copperas and filter salt alone.

In addition, when joint grinding is used instead of mixing the copperas and/or filter salt into the cement, the results are even more surprising. Alone, at least 2.0 kg/t/ppm of either copperas or filter salt is required to achieve a reduction of chromate to <0.1. However, when copperas is mixed with filter salt in a 1:1 ratio, the total amount required to achieve a reduction of chromate to <0.1 ppm drops to 1.3 kg/t/ppm. This corresponds to only 0.65 kg/t/ppm of copperas and 0.65 kg/t/ppm of filter salt, neither of which alone would have been able to achieve a reduction of chromate below 3.5 ppm. Not even 1.3 kg/t/ppm of either copperas or filter salt alone would be able to achieve this level of chromate reduction. When the ratio is increased to 5:1 copperas to filter salt, a total amount of 0.7 (i.e. only approximately 0.58 of copperas and 0.12 of filter salt) is required to achieve a reduction of chromate below 0.1 ppm. This is far superior to the use of either copperas or filter salt alone with a MAR, much less what one of skill in the art would expect could be achieved by combining copperas and filter salt with an MAR.

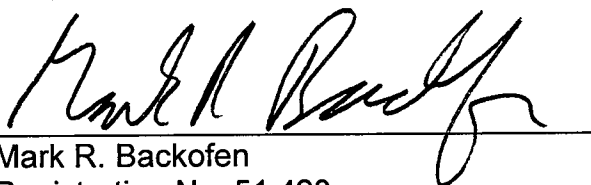
Applicant respectfully asserts that this data shows the surprising effect of using a combination of copperas and filter salt in a wide range of ratios. However, to the extent the Examiner contends that this data still requires a limitation on the ratio of copperas and filter salt, it is respectfully asserted that the range of ratios set forth in dependent claim 18 is fully supported by this data and has surprising results compared to the prior art.

Moreover, such a result is highly beneficial and cost effective because copperas is a more expensive component than filter salt. Filter salt is a byproduct of other processes and is less expensive than copperas. Recycling the filter salt is of great benefit to the environment. Therefore, by combining copperas and filter salt with an acid regulator, a surprisingly improved reduction of chromate can be achieved at a lower cost.

Based upon a combination of the reasons discussed above, it is respectfully submitted that all of the currently pending claims are patentable over the prior art. Accordingly, allowance of this application is respectfully requested. To the extent that the Examiner is not inclined to issue a notice of allowance, Applicant respectfully requests the opportunity to conduct an interview with the Examiner to discuss any remaining issues prior to the issuance of the next office action. It is believed that a fee is due for a one-month extension of time, which has been authorized by the enclosed request for an extension of time. The Commissioner is hereby authorized to charge any other fee due in connection with the filing of this paper and the entry of the requested amendments to the Locke Lord Bissell & Liddell LLP deposit account no. 12-1781.

Respectfully submitted,

Date: June 24, 2011

A handwritten signature in black ink, appearing to read "Mark R. Backofen", written over a horizontal line.

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